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ABSTRACT

This paper addresses the different characteristics of children with hyperlexia, high functioning autism, and Asperger's Syndrome. It describes the pattern of development of 20 children with the characteristics of hyperlexia (precocious reading development and disordered language acquisition, accompanied with concomitant social and behavioral deficits). It reports on a study which found that hyperlexic children comprised a surprisingly homogeneous group with predictable patterns of development. Some of these patterns included: (1) early words which were lost and not regained until after age 2; (2) early speech and language attempts that were echolalic; (3) language that was learned in "chunks" of whole phrases and even dialogues; (4) idiosyncratic language use; (5) self-stimulatory behaviors and ritualistic behavior; (6) tantrums; (7) difficulties with socializing; and (8) delayed fine motor skills. The paper argues that although hyperlexia has similarities to autism and/or Asperger's syndrome, it should be classified as a separate sub-category of Pervasive Developmental Disorder. (DB)

The Syndrome of Hyperlexia vs. High Functioning Autism and Asperger's Syndrome

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When we first met Abie at the age of three, he was very active, had temper tantrums, was echolalic, and did not appear to understand much of what was said to him. He had unusual fears and did not play well with other children. Yet he had been reading since the age of 2. He at first appeared to have characteristics of high-functioning autism or of Atypical Pervasive Developmental Disorder. As we watched him develop, however, it became evident to us that he also resembled the description in the literature of children with hyperlexia. Aram & Healy (1988), Huttenlocher & Huttenlocher (1973). Now, four years later, Abie is in a regular first grade class. His language comprehension is 4 years above chronological age and his IQ is in the 120's. He makes inferences, comprehends verbal subtleties and understands humor. He transfers what he learns into new situations. He still, however, has a bit of difficulty socializing. He remains somewhat egocentric and complains that the other kids don't always do what he wants them to do.

We asked ourselves, "Is this child with hyperlexia at the top of the continuum of what would be considered high-functioning autism? Does he resemble those individuals described by Asperger? (Asperger 1944). Or is hyperlexia a separate subgroup of children with Pervasive Developmental Disorder? We began to look at other children in our caseload who exhibited the characteristics of precocious reading development and disordered language acquisition, with concomitant social and behavioral deficits. They were a surprisingly homogeneous group with predictable patterns of development. And, as we researched the literature, those studies of hyperlexia which accepted the criteria of precocious reading abilities emerging in preschool years within a context of disorders of language acquisition and comprehension, all presented cases with striking similarities to ours. Richman & Kitchell (1981), Cohen, Campbell & Gelardo (1987), Healy, et al. (1982).

The present paper will describe the pattern of development of 20 children who exhibit characteristics of the syndrome of hyperlexia as compiled from questionnaires completed by their parents. The questionnaire was designed to plot the various symptoms at 6 month intervals, so that the ebb and flow of particular symptoms could be seen longitudinally. Parents were encouraged to consult evaluation reports, IEPs, and medical records to assist in remembering their child's development. The data was then compiled at each 6 month interval and general patterns began to emerge. A pattern of development was considered to be characteristic if it was exhibited in 75% of the children in our study. This data was then compared to literature descriptions of individuals with high-functioning autism and Asperger's syndrome. (Future studies will compare responses to our questionnaire by parents of children in these two groups).

Since it was a criterion for inclusion in our study, all children read precociously before the age of 5. There were, however, individual differences in the emergence of reading. Some children were automatic decoders at a very young age. Others began as sight readers and later "cracked" the phonetic code. Some began reading only single words and when they began to read sentences, skipped over the "unimportant" little words. Comprehension of reading closely mirrored comprehension of verbal language, though the hyperlexic children generally responded better and at an earlier age, when presented with written information or questions. This characteristic differs from a savant skill in that it is not an isolated ability. Information acquired by reading can be accessed and language can be learned with the assistance of reading. The characteristic of precocious reading, while common in high-functioning autistic children, is not always present. Precocious reading was only occasionally mentioned in case histories of Asperger's Syndrome described by (Wing 1981).

Language acquisition in children with the syndrome hyperlexia followed a similar pattern in most subjects in this study. Most children's first words developed at 12-18 months, but approximately half of the children lost those words and did not begin to regain them until after age two. Language then was acquired through Gestalt processing. Early speech and language attempts were echolalic (both immediate and delayed). Language was learned in "chunks" and whole phrases and even entire dialogues were used as conversation. There were abnormalities in form and content of language, with stereotypic intonation patterns, perseveration, pronoun reversals and idiosyncratic use of words or phrases. Comprehension of single words exceeded comprehension in context and interpretation of words was concrete and literal. Many hyperlexic children showed a marked improvement in their language abilities beginning at age 4- 1/2 to 5, although difficulties in holding social conversations persisted. This pattern of language acquisition is similar to that of many high-functioning autistic children reported in the literature. Difficulties with social language persist in autistic individuals throughout adulthood. Individuals with Asperger's syndrome are reported to have developed good grammatical language skills though they too have difficulty comprehending subtle, abstract language (Wing 1981).

In the early years, hyperlexic children in this study exhibited many of the behaviors typically associated with autism: self-stimulatory behaviors, need for routine, ritualistic behaviors, tantrums, sensitivity to sensory input (noise, odors, touch), general anxiety and specific unusual fears. These behaviors subsided substantially as growth in language, generally at age 4 1/2 to 5. These children were generally affectionate with their families and were better able to relate to adults than children. By age 5, they became able to participate in structured interactive games with peers and imaginative play developed. Difficulty in socializing and handling large groups remained problematic through the primary grades. Though hyperlexic children often succeed in regular education classrooms with some minor modifications in instruction. The diminishing of autistic symptoms at a relatively young age with the concomitant growth in language implicates language processing problems as a causal factor. This may also be true for high-functioning autistic children, though there may be other factors which would cause autistic behaviors to persist longer in this group. Descriptions of Asperger's syndrome include stereotypic movements of body and limbs, and intense fascination with one or two subjects to the exclusion of all else (Wing 1981).

Our group of children with hyperlexic syndrome generally had normal gross motor development and normal neurological tests. Fine motor skills were often delayed. Most were boys, though there were two girls in this study. Most had no family history of disorders, though several families were positive for autism and learning disability in the previous generation. Individuals with Asperger's Syndrome were described as clumsy and uncoordinated, while autistic individuals are often described as being very well coordinated.

While children with the syndrome of hyperlexia may be classified as having a Pervasive Developmental Disorder, and while there may be some similarities to children with autism and/or Asperger's syndrome, we would argue that there is merit in classifying this syndrome as a separate sub-category of P.D.D. The differentiating characteristics appear to center around the hyperlexic children's ability to develop higher level language skills and the children's innate desire to develop social relationships, though they may lack the pragmatic language skills to do so effectively. The primary reason for developing a specific diagnostic category for hyperlexia is to assure that hyperlexia is well understood so that appropriate treatment strategies can be developed. In our experience in speech and language therapy with these children, it is crucial that the reading skill be employed as a primary means of developing language. Reading can also be used for behavioral management and for assisting the child in understanding classroom routine. Because precocious reading is not expected in a child who exhibits a language disorder and aberrant behaviors, it is often regarded as a "splinter skill" and is not exploited as a means for learning. It is natural for a teacher to try restating a direction verbally when a child does not respond, but these children need the direction to be written so they have something tangible to look at. We also have used this approach with autistic children who read precociously. The major difference we have seen has been the autistic children's reduced ability to utilize the information acquired through reading within meaningful language.

Most of the children in our study have had intensive therapy which fully utilized their reading capacities and they have families who have been creative in devising ways to help these children learn and

socialize. Certainly this will have an effect on the ultimate outcome for these children.

Note: Copies of the questionnaire and a more detailed summary of the data are available through the Center for Speech and Language Disorders.
